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Quick Response Code:

Website: www.jehp.net
DOI: 10.4103/jehp.jehp_129_23

Conceptual explanation of adolescents' media health literacy: A qualitative content analysis

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Abstract:

BACKGROUND: The high use of media among adolescents is involved in negative social and health consequences. Therefore, it is critical that adolescents acquire the skills to interact with media content in a healthy way. This study aimed to identify the dimensions and concept of media health literacy (MHL) among adolescents.

MATERIALS AND METHODS: In this qualitative study, specialists (n = 19) in the field of health education and promotion, as well as a wide range of activists in the field of media and communication and adolescents (n = 20), who met the inclusion criteria were participated in this study. Participants were recruited by purposive sampling. Exploratory, open-ended, and face-to-face interviews based on the interview guide were used to elicit participants' perspectives from October 2021 to May 2022 in Tehran, Iran. The interviews were analyzed by content analysis using the inductive method and MAXQDA 2020.

RESULTS: A total of eight health education and promotion specialists (20.51%), nine media and communication specialists (23.07%), two software and programming instructors (5.12%), and 20 adolescents (51.28%) were included in the study. Analysis of qualitative data led to the identification of five categories (media literacy (ML), health literacy (HL), media reference, interactive communication literacy, and basic literacy (BL)) and 25 subcategories.

CONCLUSIONS: Our findings provide a deep understanding of the concept and domains of MHL. Based on the results, MHL can be defined as a set of knowledge and individual skills needed in the fields of ML, HL, interactive communication literacy, media reference, and BL, which help achieve the appropriate state of MHL among adolescents and its improvement. It is hoped that these findings are used to guide the development of interventions for MHL.

Keywords:

Adolescent, health literacy, media literacy, qualitative research

Introduction

The media has emerged step by step with the advancement of technology from a long time ago and acts as the biggest educators of people in the field of health. Based on the surveys conducted in different societies, the media plays a significant role in human life and people's health since a large amount of their time is spent using the media.^[1] In addition, utilizing correct health information and its transmission

requires media literacy (ML) since such information is mostly transmitted through the media.^[2] ML is defined as "the ability to access, analyze, assess, and communicate with media messages in various forms."^[3]

Furthermore, the concept of health literacy (HL) is proposed to reflect the set of skills required for effective health management from health care to disease prevention and health promotion.^[4,5] Mostly, the definitions provided by the American Medical Association (AMA), Institute of

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How to cite this article: Daneshvar S, Ghaffari M, Ramazankhani A, Marashi T. Conceptual explanation of adolescents' media health literacy: A qualitative content analysis. J Edu Health Promot 2023;12:333.

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Received: 30-01-2023
Accepted: 25-03-2023
Published: 29-09-2023

Medicine (IOM), and World Health Organization (WHO) are applied although a large number of definitions are presented for HL.^[4] The skills such as capacity and ability to access, comprehending and understanding, processing and evaluating, and decision-making and behavior about information and services related to health are observed in all definitions provided for HL.^[6] Reviewing the results of HL interventions indicates its positive impact on the health of society in various subjects.^[7-10]

The skills to access, understand, analyze, and use relevant information are among the common points in the definitions of HL and ML. However, the media from which information is obtained is not specified in HL, while the information field achieved from different media is not indicated in ML. In fact, HL and ML can complement each other.^[2] The scope and significance of media health literacy (MHL) are understood by combining HL and ML.^[11]

The concept of MHL is considered unique because it regards the information provided to individuals through the media to present health guidance and include the implicit and explicit mass media content, which is usually produced by commercial entities or health systems, and can promote health.^[5]

The level of ML among people in society varies in health-related issues.^[1] Page *et al.*^[12] reported low ML for tobacco in Vietnam. People fail to have sufficient and decent ML in developing countries including Iran. In addition, Solhi *et al.*^[13] studied the ML among female dormitory students on self-inflicted use of slimming drugs and confirmed the abovementioned results.

Media consumption has attracted adolescents' attention in the age of communication revolution, meaning that the effects of new media including social networks on their personality and identity cannot be denied.^[14] WHO examined health behaviors among school children (HBSC) in Europe and North America and indicated that adolescents spend more time with media. Other studies reported that mass media can promote or endanger health behaviors among adolescents.^[15]

Few literature studies were observed regarding the explanation and definition of the concept of adolescents' MHL. However, none of these studies explore the meaning and attributes of this concept explicitly. This study can be considered the first attempt to introduce and explain the concept of MHL. The MHL should be utilized to receive, understand, analyze, and apply the information correctly considering the aforementioned issues, especially their significance in the current situation where the media transmit information constantly. This

study aimed to identify the dimensions and concept of MHL in adolescents.

Materials and Methods

Study design and setting

This qualitative study was conducted using conventional content analysis to interpret the content of textual data, which identifies hidden and obvious themes or patterns in the text through a regular classification process.^[16]

Study participants and sampling

The participants included two groups of specialists in the field of health education and promotion, as well as a wide range of activists in the field of media and communication. In addition, a number of adolescents aged 12–18 years studying in middle and high school with maximum diversity in age, sex, grade, and field of study from different areas of Tehran were selected as the population and interviewed. The samples were identified and selected based on a purposive sampling method.

Inclusion criteria for specialists included willingness to participate in the study and having expertise in the field of health education and promotion, as well as media and communication. Also, the criteria for adolescents included the willingness to participate in the study.

Data collection tools and techniques

The data were collected through in-depth semi-structured, face-to-face interviews from October 2021 to May 2022. Interviews were conducted at people's workplaces, universities, schools, and in some cases by phone. The main investigator (SD) conducted the interviews, who had previous experience in qualitative interviewing and interview calibration and was also unknown to the participants.

The interview guide was developed in two separate sections, and its content validity was checked by the research team.

The interviews started with general questions and continued with more specific ones, considering the individuals' responses. The guide questionnaire is shown in Table 1. The text of interviews, each of which lasted between 20 and 60 minutes, was sent to the participants and approved after implementation. The research team confirmed data saturation by conducting 36 interviews. However, three more interviews were conducted for further verification. Finally, no new data were found, resulting in stopping the interview process. To improve the data gathering quality, with the consent of the participants, interviews were audio-recorded for verbatim transcription. They were assured that their

Table 1: Interview guide questions to explain the concept of MHL from the perspective of specialists and adolescents

To interview specialists

1. How do you explain the concept of MHL?
2. What areas are covered by the concept of MHL according to the definition provided in this regard?
3. How do you explain the concept of MHL and its areas to adolescents?
4. What should an adolescent have about the MHL?
6. What factors increase the MHL among some adolescents unlike others (What factors determine and shape the MHL?).
7. Add anything you think can help.

To interview with adolescents

1. Everything in life needs a special literacy. For example, people need technical and mechanical literacy and should know the first requirements related to the car for such kind of work. In addition, people need HL to improve their health. People utilize information from different sources for such literacy. How do you obtain such information?
How do you advise your friends to achieve health-related content or information from the media?
2. A special literacy is needed to achieve the required information when referring to the media. What is such literacy and how can it be defined?
Let us call such literacy MHL (the literacy obtained from the media about health).
3. What does MHL include?
4. What does an adolescent need to have MHL? What things should the adolescent consider? Could you indicate some examples?
5. Is there anything I did not ask and you wish to indicate?

voices would be removed after the interviews were conducted.

Data analysis

The interviews were analyzed by content analysis using the inductive method and MAXQDA 2020. The interviews were recorded, written, and reviewed after achieving permission, and their content was coded by two researchers. The data were analyzed and collected concurrently and continuously. The obtained data were analyzed using the content analysis method. To this aim, the method of Graneheim and Lundman (2004) was utilized. First, the text of the interviews was implemented word by word. Then, the text was divided into meaning units, which were summarized and shortened. In the next step, abstracting semantic units was designed and the codes were selected. In the next procedure, the data were coded and summarized. Then, the codes denoting a single topic were placed in a category based on the continuous comparison of similarities, differences, and appropriateness. In the next step, categories and subcategories were classified and central codes were formed. In the next procedure, the summary categories and the central concept of each category were identified, and the main and abstract concepts were extracted at the interpretation level. Then, the concepts were reviewed

based on the description of internal themes considering the entire data.^[17]

To check the accuracy and robustness of the data, Lincoln and Guba indices including credibility, dependability, confirmability, and transferability were used.^[18] To increase the credibility of the data, various strategies such as member check, long-term engagement with the subject, and data review by the research team were utilized. The reliability of findings was confirmed by taking measures such as applying the coding and decoding method during data analysis and recording all stages from the beginning to the end. Methods such as sampling with maximum diversity, describing the findings and participants in detail, sampling, time and place of data collection, and observer check were used. The transferability of the findings increased by recording all stages and decisions made during the study, as well as by reviewing the work report by colleagues and confirming its stages.

Ethical consideration

This study is considered a part of the PhD thesis on health education and promotion confirmed by the ethics committee in Shahid Beheshti University of Medical Sciences (IR.SBMU.PHNS.REC.1400.046). The main information such as objective, interview method, confidentiality of the information, the right to participate or withdraw, and preservation of the audio file was given, as well as obtaining informed consent to participate and audio recording from the participants at the beginning of the interview.

Results

Participants' characteristics

The opinions of 39 participants including eight health education and promotion specialists (20.51%), nine media and communication specialists (23.07%), two software and programming instructors (5.12%), and 20 adolescents (51.28%) were analyzed. Tables 2 and 3 indicate the demographic information of the participants. The schematic model of the concept of MHL is presented in Figure 1.

Finally, 159 codes, 25 subcategories, and five main categories were extracted. The relevant information is summarized in Table 4.

Media literacy

ML refers to searching, assessing, selecting, and sharing health information in the media. This category involves nine subcategories: media legal knowledge, professional conduct in media usage, trust in media, message goal recognition, knowledge of media, media utilization skill, media creation skill, news knowledge, and security in media usage.

Table 2: Demographic characteristics of specialists (n=19)

Participant number	Age	Gender: F: female/ M: male	Education	Expertise
S1	35	F	PhD in health education and promotion	Researcher in media field/media activist
S2	41	F	PhD in health education and promotion	Researcher in health literacy field
S3	36	F	Master of media management	Manager of public relations of the hospital
S4	39	F	PhD in health education and promotion	Faculty member of the university/media activist
S5	38	F	PhD in public relations	Public relations specialist of the Ministry of Health
S6	46	M	Master of media management	Documentarian
S7	51	M	Master of journalism	Journalist/photographer/reporter
S8	31	M	PhD in journalism	News reporter
S9	31	M	PhD in media management	Announcer
S10	47	F	PhD in health education and promotion	Faculty member of the university
S11	27	F	Bachelor of software engineering	Teacher of computer and programming courses
S12	37	F	PhD in communication sciences	Faculty member of communication sciences
S13	28	M	Master of public relations	Reporter
S14	46	F	PhD in health education and promotion	Faculty member of the university
S15	25	F	PhD in health education and promotion	Reporter/announcer
S16	38	M	PhD in health education and promotion	Faculty member of the university
S17	33	M	Master of media management	Manager of public relations of university
S18	27	F	Bachelor of software engineering	Teacher of computer and programming courses
S19	43	F	PhD in health education and promotion	Faculty member of the university

Table 3: Demographic characteristics of adolescents (n=20)

Participant number	Age	Gender: F: female/M: male	Grade	Major
A1	13	F	Middle school	-
A2	16	F	High school	Vocational/technical (graphics)
A3	12	M	Middle School	-
A4	15	F	High school	Experimental science
A5	18	F	High school	Humanities
A6	12	M	Middle school	-
A7	13	M	Middle school	-
A8	12	M	Middle school	-
A9	15	F	Middle school	-
A10	14	F	Middle school	-
A11	13	F	Middle school	-
A12	14	M	Middle school	-
A13	13	M	Middle school	-
A14	18	M	High school	Experimental science
A15	13	M	Middle school	-
A16	18	M	High school	Vocational/technical (computer)
A17	18	F	High school	Mathematics
A18	17	M	High school	Vocational/ technical (accounting)
A19	17	M	High school	Vocational/technical (mechanics)
A20	17	M	High school	Humanities

Media legal knowledge

This subcategory refers to the information that an adolescent should have in the field of laws and legal issues related to sending and sharing information in the media.

“Legal laws determine the forbidden information to be sent, which include legal aspects related to the method of utilizing digital media without violating anyone’s rights. Sometimes, the legal issues arise even some information may be regarded

as confidential and should not be shared with others” (14th specialists).

Professional conduct in media usage

This subcategory refers to the ability of adolescents to send and share information, so that they avoid sharing invalid information and fake news in the media.

“We must be careful not to join the groups and channels that send us membership requests on WhatsApp, Telegram, etc.” (6th adolescent).

Table 4: Categories, subcategories, and a sample of code

Category	Subcategories	Example of codes
Media literacy	Media legal knowledge	<ul style="list-style-type: none"> • Knowledge of consequences of message transmission • Knowledge of legal rules of sending information • Legal knowledge in information sharing
	Professional conduct in media usage	<ul style="list-style-type: none"> • Avoiding send of invalid messages on virtual networks • Avoiding share of unauthentic messages received in virtual networks • Avoiding join of suspicious groups and channels in virtual networks • Adhering to scientific trusteeship in republishing health information received from the media
	Trust in the media	<ul style="list-style-type: none"> • Trust in reliable media • Trust in the right source • Lack of trust and belief in the contents of any media
	Message goal recognition	<ul style="list-style-type: none"> • The ability to recognize the goal of message transmission • Knowledge of distinguishing direct and indirect messages • Identifying the hidden goals of the message • Identifying the economic motives of the message
	Knowledge of media	<ul style="list-style-type: none"> • Knowledge of different types of media • Knowledge of new media such as motion graphics, animation, and the like • Knowledge of characteristics of different media • Knowledge of function of social networks • Knowledge of use of different media
	Media utilization skill	<ul style="list-style-type: none"> • The ability to use media such as mobile phones and the like • The ability to work in social networks such as WhatsApp, Telegram, and Instagram • Knowledge of method of working in virtual space and the Internet • Skill in sharing information • Skill in publishing correct information through the right channel
	Media creation skill	<ul style="list-style-type: none"> • The ability content creation with media formats such as motion graphics, animation, and the like • The ability to create media • Ingenuity in media creation with received information
	News knowledge	<ul style="list-style-type: none"> • Knowledge of components of correct news • Knowledge of determining factors of authentic news • Knowledge of information and news evaluation indices
	Security in media usage	<ul style="list-style-type: none"> • Knowledge of information protection methods • Knowledge of safe methods to download • The ability to download media safely
	Health literacy	Health knowledge
Recognizing and validating health resources		<ul style="list-style-type: none"> • Knowledge of reliable sources in the field of health • Knowledge of organizations and people with opinions on health issues • Identifying authentic health pages in Instagram space • The ability to assess the credibility of health resources
Health agenda in media search		<ul style="list-style-type: none"> • Prioritizing health issues for media searches • Being curious and searching health topics • Focusing on health issues in research
Searching health information skill		<ul style="list-style-type: none"> • The ability to search for information in a health-related database • The ability to obtain the required health information from various news sources • Skill of achieving health information from the media • The ability to obtain health information from the media
Understanding health-related content		<ul style="list-style-type: none"> • Understanding health information searched from the media • The ability to decode and understand messages and health information received from the media • The ability to understand health-related content received from the media
Validating health-related content		<ul style="list-style-type: none"> • The ability to evaluate the health information received from the searched media • Skill of assessing the accuracy of health news published by the media

Contd...

Table 4: Contd...

Category	Subcategories	Example of codes
Media reference	Critical thinking on health content	<ul style="list-style-type: none"> • The ability to recognize reliable health information in the media • The ability to separate health content in terms of credibility • The ability to check the validity of received health information by comparing it to other sources
		<ul style="list-style-type: none"> • The ability to analyze health information provided by various media • The ability to evaluate health content received from the media critically • Critical thinking skills in health information received from the media • Reasoning skills versus received information
	Applying received health information	<ul style="list-style-type: none"> • The ability to apply messages and content related to health received from the media • Decision-making skills to use health information received from the media
		<ul style="list-style-type: none"> • The ability to utilize health information searched • The ability and capacity to act based on health information received from the media
	Diagnosing the effects of media on health	<ul style="list-style-type: none"> • Understanding the impact of media information on health • Identifying and diagnosing the impact of information received from the media on health • Knowledge of disadvantages and risks of applying media in one's health • Knowledge of impact of media messages on one's mood
		<ul style="list-style-type: none"> • Referring to the media (mainly the Internet) to solve problems in health issues. • Utilize media to find different solutions to solve problems in health issues
	Applying the media to solve health problems	<ul style="list-style-type: none"> • Finding answers to health questions from media sources
		<ul style="list-style-type: none"> • Referring to the media to solve life's problems. • Utilize media to find different solutions to solve life's problems
	Applying the media to solve non-health problems	<ul style="list-style-type: none"> • The ability to find answers to questions through media
		<ul style="list-style-type: none"> • The ability to tailor the message commensurate with the personality characteristics of people • The ability to tailor the message to interact with different personality traits effectively • The ability to modify the message commensurate with the person receiving the message
Interactive communication literacy	Tailoring information skill	<ul style="list-style-type: none"> • The ability to ask questions in interactive media • The ability to express opinions for and against the topic • The ability to provide individual analysis related to the subject • Skill of recording criticisms related to the subject
	Media interaction skill	<ul style="list-style-type: none"> • The ability to read content on virtual pages • The ability to read news in databases • The ability to read messages received from mobile phones and social networks such as WhatsApp, Telegram, and the like
Basic literacy	Reading skill	<ul style="list-style-type: none"> • The ability to write keywords to search on virtual pages • The ability to write search terms in the media • The ability to write messages on social networks such as WhatsApp, Telegram, and the like
	Writing skill	<ul style="list-style-type: none"> • Knowledge of other languages to obtain information • The ability to read and understand another language • Understanding the content of virtual space in non-Persian language
	Language skill	

Trust in media

Some participants mentioned to trust in the media and what adolescent needs to be aware of and acquire skills in this matter.

“For example, we should not believe everything. Some sites try to deceive people and change their mentality. We should not pay too much attention to these” (9th adolescent).

Message goal recognition

According to this subcategory, adolescents should be able to recognize the goals and motivations in designing and conveying the message.

“Adolescents should evaluate the reason for transmitting the messages or contents and their creators' objective” (4th specialist).

Knowledge of media

Most participants mentioned the adolescent's skill in recognizing different media and their space, functions, and application.

“Adolescents should be known different types of media. They should recognize the media and their strengths, weaknesses, uses, and the method of their application” (10th specialist).

Media utilization skill

Most participants mentioned adolescent's ability to use different media including Telegram, WhatsApp, Instagram, Internet, and the like.

“Adolescent's ability to utilize the social media such as Instagram, Telegram, WhatsApp, and the like should be examined” (12th specialist).

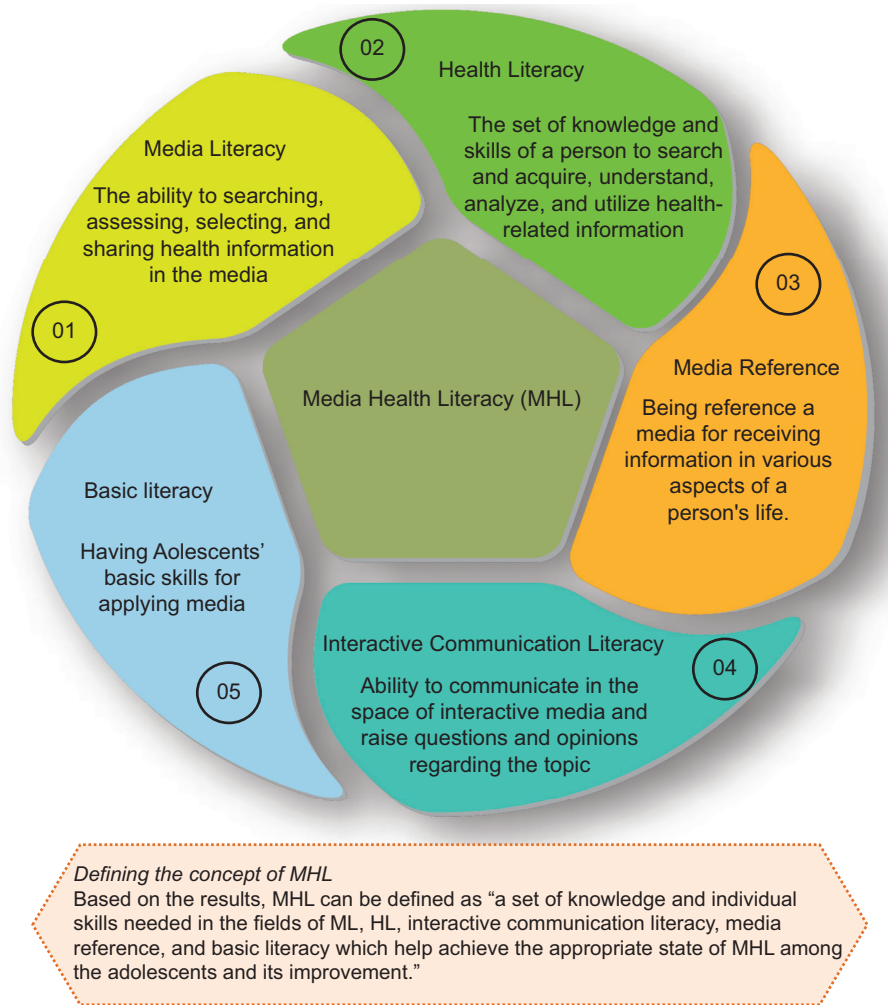


Figure 1: The schematic model for the conceptual framework of media health literacy and the proposed definition

Media creation skill

This subcategory focuses on adolescents' ability to create media with the knowledge and information acquired from the media.

“Adolescents should be able to create media in different forms. Nowadays, there are a large number of software which can create clips, stickers, films, and multimedia files even without the need to take a course” (10th specialist).

News knowledge

This subcategory refers to the knowledge and information needed for recognizing and evaluating the news received from the media.

“Adolescents should know the characteristics of right news in the field of health since there are a series of standards for such characteristics that they should know about them” (13th specialist).

Security in media usage

Some participants mentioned that adolescent should be able to apply safe methods to prevent hacking the

information or infecting the system by virus during downloading the required content in cyberspace.

“We should be careful when using the internet and phone; some hackers access individuals' information. For example, we should not enter any site or group because they might hack and obtain our information” (13th adolescent).

Health literacy

HL refers to the set of knowledge and skills of a person to search and acquire, understand, analyze, and utilize health-related information. This explored dimension involves nine subcategories: health knowledge, recognizing and validating health resources, health agenda in media search, searching health information skill, understanding health-related content, validating health-related content, critical thinking on health content, applying received health information, and diagnosing the effects of media on health.

Health knowledge

This subcategory focuses on the set of information and

knowledge needed in the field of health such as health concepts, methods to prevent diseases, healthy lifestyle, information in the field of infectious diseases, and the like.

"Adolescent should know the health information in any field such as contracting infectious diseases" (12th specialist).

Recognizing and validating health resources

Some participants mentioned that adolescents should be able to identify health-related resources, evaluate and judge resources, and select an authentic source to obtain the required information.

"First, the places from which the health information can be achieved should be known. Then, a secure source should be found and selected by searching more on the Internet and asking the elders and people with appropriate information in this field" (6th adolescent).

Health agenda in media search

This subcategory is related to adolescents' curiosity in their searches in different media.

"Most of us are in virtual space, WhatsApp, Telegram groups, etc., It is good to be a little curious about our health and get information about it" (17th adolescent).

Searching health information skill

This subcategory focuses on the adolescent's ability to search for health-related information in the media and obtain the required information.

"Adolescents should be able to search health-related concepts in different media and achieve their needed information, which is among the skills defined in the field of MHL" (2nd specialist).

Understanding health-related content

This subcategory is related to adolescent's understanding of the health information obtained from the media.

"Adolescents should be able to understand the information achieved correctly" (2nd specialist).

Validating health-related content

This subcategory focuses on evaluating and judging the obtained health information and the ability to distinguish the correct information from various searches.

"It is important to me that the information I get must be correct; sometimes, it may be right, and sometimes, it is wrong, and that's why I look for it more. For example, I ask others about it, show it to my teacher or mom, and search again on the Internet" (9th adolescent).

Critical thinking on health content

Some participants mentioned that adolescents should be able to have a causal view of the health content received from the media and analyze this information.

"Adolescents with MHL should ask the reason for claims, identity of related news agency, and reason for publishing the content after receiving a health issue, as well as searching the method of analyzing, which is considered as the analytical part of the story" (13th specialist).

Applying received health information

This subcategory focuses on the adolescent's ability to utilize the health information received from the media.

"Adolescents should understand the information in order to make decisions commensurate with their health status" (8th specialist).

Diagnosing the effects of media on health

This subcategory is related to identifying and diagnosing the effects of the media on health.

"Using it too much harms them because they may be deceived by its content which affects their mood and spirit and, they will suffer the consequences" (9th adolescent).

Media reference

Based on this category, the media can be regarded as a reference for receiving information on different aspects of a person's life. This category involves two subcategories: applying the media to solve health problems and applying the media to solve non-health problems.

Applying the media to solve health problems

This subcategory refers to adolescents' recourse to the media to find solutions to problems related to health.

"If I have a question about my health, I do one thing, for example, I search on the internet to see what is written" (2nd adolescent).

Applying the media to solve non-health problems

Some participants mentioned that adolescents should be able to find various solutions to eliminate obstacles with the information received from the media.

"A series of skills were indicated before. Eliminating the obstacles is considered as another skill, meaning learning to face with barriers after receiving the information from the media" (11th specialist).

Interactive communication literacy

This category refers to adolescents' ability to know the audience for sending messages and have interactive communication in utilizing the media. This category involves two subcategories: tailoring information skill and media interaction skill.

Tailoring information skill

This subcategory focuses on adolescents' ability to modify the message according to the audience.

“Adolescent should be able to change the message he/she aims to send for someone else including friend, family members, or relatives commensurate with his/her knowledge from the other side” (15th specialist).

Media interaction skill

Some participants mentioned that adolescents should be able to communicate in the space of interactive media and raise questions and opinions regarding the topic.

“Adolescent should be able to ask questions and express his/her personal opinions and analyses regarding the topic in the space of interactive media with a two-way chat function” (2nd specialist).

Basic literacy (BL)

This category focuses on adolescents' basic skills for applying media. This category involves three subcategories: reading, writing, and language skills.

Reading skill

According to this subcategory, adolescents should be able to read material received from the media.

“Adolescent should be able to read the messages received from Telegram, WhatsApp, or anything else shown on TV” (6th adolescent).

Writing skill

Based on this subcategory, adolescents should be able to write messages on social networks or even search terms in the media.

“Adolescent should be able to reply to a message in the Telegram or WhatsApp, or write something he/she aims to search about” (6th adolescent).

Language skill

According to this subcategory, adolescents should be able to know and understand other languages to obtain information.

“Lots of information related to the health field is presented in a language other than Farsi. Does the adolescent know that he/she can trust the science magazine about a certain issue? Does he/she know English to read the science magazine? Can he/she search in WHO website and ask his/her questions there?” (12th specialist).

Discussion

The present study aims to explain and identify the concept and dimensions of MHL among adolescents. MHL was defined with five main categories including ML, HL, media reference, interactive communication literacy, and BL.

Few studies have been conducted on the concept of MHL since its presentation. Levin-Zamir *et al.*^[11] investigated the method of developing the concept of MHL and designing its instrument, resulting in defining its conceptualization as a spectrum of the ability to identify health-related content in different types of media including explicit or implicit, recognize their impact on health behaviors comparable to functional health literacy (FHL), analyze the contents comparable to critical health literacy (CHL) critically, and indicate the intention to respond through action in personal/supportive behavior comparable to interactive health literacy (IHL). In the present study, almost different dimensions were obtained, which are only consistent with parts of the abovementioned spectrum among the subcategories of HL, health knowledge, and the skill of analysis and critical thinking of health content. To explain the concept and identify the dimensions of MHL, a qualitative study was conducted applying semi-structured in-depth interviews with specialists in the field of media and communication, and health, as well as adolescents aged 12–18 years. In addition, Levin-Zamir *et al.*^[11] conducted a qualitative study in the form of a focus group with a limited age group of adolescents.

Furthermore, Norman and Skinner,^[19] as the pioneers of the field, proposed and defined the concept of electronic HL as “the ability to find, understand, and evaluate health information from electronic sources and apply the knowledge achieved to eliminate a health obstacle.” Based on the results, electronic HL is regarded as a combination of six different areas of literacy including traditional literacy (TL), information literacy (IL), scientific literacy (SL), ML, computer literacy (CL), and HL, among which ML, HL, and BL are considered dimensions obtained here.

There are two accepted theoretical models, which describe ML.^[20,21] The British model emphasizes understanding the media producers' objectives and the target audience's characteristics, multiple complex production techniques used to convey meaning, and the ability to distinguish media representations from reality.^[20] The United States (US) model emphasizes that media messages are carefully constructed utilizing their own complex language, different people interpret messages differently, messages contain inherent values and perspectives, and media messages are created for profit or power.^[21] Primack *et al.*^[22] designed the instruments of smoking media literacy (SML) for adolescents in Pittsburgh in the US based on the aforementioned ML framework and by combining the key concepts in English and American theoretical models in this regard. The significant areas in the abovementioned instruments included author and audiences (AA), messages and meaning (MM), and representation and reality (RR), which differ from

the dimensions obtained here due to different methods and conceptual framework applied in the two studies. Primack *et al.*^[22] determined the dimensions of their concept by combining English and American theories.

ML is defined in various literature studies as “the ability to access, analyze, evaluate, and communicate with media messages in various forms.”^[3] The information obtained here for ML and its subcategories indicates new dimensions and skills related to this concept. Examples of these skills include the recognition of different media, the ability to use each of them, the ability to create media, skills in sharing information, skills in the field of preventing information from becoming viral and hacking, and skills in understanding the goal of the information received. James Potter^[23] analyzed the definitions of ML. He identified a variety of skills for ML. Among them, four skills are similar to what is shown in the present study for ML and its subcategories. These skills included recognizing patterns, challenging meanings, deciphering sender intent, and producing messages.

HL and its subcategories obtained here demonstrate similarities with the definitions presented before, despite displaying new dimensions of this concept. Sorensen *et al.*^[4] studied 17 definitions and 12 conceptual frameworks of HL and presented a conceptual framework containing 12 dimensions, which included knowledge, motivation, and capacity to access, understand, judge, and use health information by people to judge and make decisions regarding daily healthcare concerns, disease prevention, and health promotion to maintain and develop the quality of life. Almost most of the key skills presented in the aforementioned definition are observed in what was obtained here.

New media have become one of the main sources of education and learning. All news and ideas received by such media shape the intellectual views of people. The training received from such media directly and indirectly plays a significant role in creating thinking and realizing inherent abilities, leading to teaching thinking strategies directly and performing intellectual tasks such as eliminating obstacles and reaching conclusions to solve problems among the audiences skillfully.^[24] To train thinking and questioning, designers of new media products can embed games, which challenge and engage the audience's mind by raising issues and questions, and prepare children and adolescents to solve the problems collectively by forming small and large groups in the atmosphere of such games.^[25] Khorraminejad *et al.*^[25] analyzed the approach of children and adolescents aged 10–14 in the Clash of Clans digital game and argued that such games play a significant role in developing the questioning ability of children and adolescents to solve problems and make decisions. Media reference is

among the subcategories obtained here, indicating that the media can play a significant role in various aspects of a person's life as a reference. Utilizing media to solve problems is among the subcategories obtained for the abovementioned category. The aforementioned contents confirm the results of this study. Also, Mehdizadeh *et al.*^[26] in their study, stated that citizens used the media for health-oriented lifestyle choices in different aspects of health.

Message tailoring is considered a health communication strategy for disseminating informed individual recommendations, which are developed through an initial assessment of needs, preferences, beliefs, and motivations tailored to a specific audience. Customized messages tailored to the audience are designed to address factors relevant to the target audience directly and promote recommendations, which consider the individual's context.^[27] What is observed in the interactive communication literacy reflects the abovementioned concept.

BL category refers to fundamental skills in reading, writing, and understanding other languages to achieve information. The aforementioned category simulates the functional literacy proposed by Nutbeam for the levels of HL.^[28] Bahrambeygi *et al.*^[29] obtained a similar category, which they named as functional (basic) literacy.

The present study is regarded as the first one to explain the concept of MHL in Iran, which is among its strengths. In addition, a wide range of adolescent age groups with maximum diversity was considered due to the significance of the issue in the aforementioned age group. However, limitations occurred at the time of inviting people to participate in the study. Access to the specialists and determining the exact time of the interview were delayed due to their occupations. Furthermore, coordinating and interviewing with students lasted more than a week due to the virtual conditions in the schools.

Conclusion

The concept of MHL was explained, and its dimensions were identified. The results of this study can be provided to policymakers that consider them for developing effective prevention and intervention programs about adolescents' health in relation to the media. The results of this study can be an appropriate basis for future research in the design and implementation of the abovementioned interventions to improve MHL.

Acknowledgments

The authors thank the study participants for their contribution and support of the research.

Abbreviations

MHL: media health literacy, ML: media literacy, HL: health literacy, AMA: American Medical Association, IOM: Institute of Medicine, WHO: World Health Organization, HBSC: health behaviors among school children, FHL: functional health literacy, CHL: critical health literacy, IHL: interactive health literacy, TL: traditional literacy, IL: information literacy, SL: scientific literacy, CL: computer literacy, BL: basic literacy, SML: smoking media literacy, AA: author and audiences, MM: messages and meaning, RR: representation and reality.

Informed consents

Informed consent was obtained from participants.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

- Tehrani H. Media health literacy. *J Health Lit* 2016;1:141-6.
- Akbarinejad F, Soleymani MR, Shahrzadi L. The relationship between media literacy and health literacy among pregnant women in health centers of Isfahan. *J Educ Health Promot* 2017;6:17.
- Hakim Zadeh P. *Media Literacy*. 1st ed. Tehran: Shahre Pedram; 2018.
- Sorensen K, Van den Broucke S, Fullam J, Doyle G, Pelikan J, Slonska Z, et al. Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health* 2012;12:80.
- Levin-Zamir D, Bertschi I. Media health literacy, eHealth literacy and the role of the social environment in context. *Int J Environ Res Public Health* 2018; 15:1643.
- Tavousi M, Ebadi M, Azin A, Shakerinejad G, Hashemi A, Fattahi E, et al. Definitions of health literacy: A review of the literature. *J Payesh* 2014;13:119-24.
- Fernandez-Gutierrez M, Bas-Sarmiento P, Albar-Marin MJ, Paloma-Castro O, Romero-Sanchez JM. Health literacy interventions for immigrant populations: A systematic review. *Int Nurs Rev* 2018;65:54-64.
- Perazzo J, Reyes D, Webel A. A systematic review of health literacy interventions for people living with HIV. *AIDS Behav* 2017;21:812-21.
- Karimi N, Saadat-Gharin S, Tol A, Sadeghi R, Yaseri M, Mohebbi B. A problem-based learning health literacy intervention program on improving health-promoting behaviors among girl students. *J Educ Health Promot* 2019;8:251.
- Bayati T, Dehghan A, Bonyadi F, Bazrafkan L. Investigating the effect of education on health literacy and its relation to health-promoting behaviors in health center. *J Educ Health Promot* 2018;7:127.
- Levin-Zamir D, Lemish D, Gofin R. Media Health Literacy (MHL): Development and measurement of the concept among adolescents. *Health Educ Res* 2011;26:323-35.
- Page RM, Huong NT, Chi HK, Tien TQ. Smoking media literacy in Vietnamese adolescents. *J Sch Health* 2011;81:34-41.
- Solhi M, Jormand H, Gohari M. Media literacy and attitudes towards weight loss supplements in students of Iran University of medical sciences, Iran. *Mil Caring Sci* 2016;2:221-8.
- Council on Communication and Media. *Media Use in School-Aged Children and Adolescents*. *Pediatrics* 2016;138:e20162592.
- Currie C, Gabhainn SN, Godeau C, Roberts C, Smith R, Currie D, et al. *Inequalities in Young People's Health—HBSC International Report from the 2005/2006 Survey*. Copenhagen, Denmark: WHO Regional Office for Europe; 2008.
- Adel Mehraban M. *A review on qualitative content analysis and its application in research*. 1st ed. Isfahan: Isfahan University of Medical Sciences; 2015.
- Graneheim UH, Lundman B. Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today* 2004;24:105-12.
- Tabatabaee A, Hasani P, Mortazavi H, Tabatabaiechehr M. Strategies to enhance rigor in qualitative research. *J North Khorasan Univ Med Sci* 2013;5:663-70.
- Norman CD, Skinner HA. eHealth Literacy: Essential skills for consumer health in a networked world. *J Med Internet Res* 2006;8:e9.
- Bazalgette C. Key aspects of media education. In: Alvarado M, Boyd-Barrett O, editors. *Media Education: An Introduction*. London, England: British Film Institute; 1992. p. 198-219.
- Thoman E. *Skills and strategies for media education*. Santa Monica, Calif: Center for Media Literacy; 2003.
- Primack BA, Gold MA, Switzer GE, Hobbs R, Land SR, Fine MJ. Development and validation of a smoking media literacy scale for adolescents. *Arch Pediatr Adolesc Med* 2006;160:369-74.
- Potter WJ. Analysis of definitions of media literacy. *J Media Lit Educ* 2022;14:27-43.
- Sepahvand E, Yailagh M, Allipour S, Bahrooz N. Testing a model of causal relationships of family communication patterns, metacognition, and personality traits with critical thinking disposition, mediated by epistemic beliefs of female high school students in Ahvaz. *Int J Psychol* 2018;12:50-80.
- Khorraminejad M, Ashayeri H, Abtahi A, Mohammakhani K, Soleimani N. A reflection on Socratic questioning and critical thinking in digital games. *Cult Stud Commun* 2021;16:121-50.
- Mahdizadeh SM, Khashei R. The role of the media in choosing healthy life styles; with emphasise on media consumption of citizens in Tehran. *Commun Res* 2018;25:51-78.
- Lustria MLA, Cortese J. Message tailoring. In: Sweeny K, Robbins ML, Cohen LM, editors. *The Wiley Encyclopedia of Health Psychology*. Wiley-Blackwell; 2020. p. 363-71.
- Nutbeam D. Health literacy as a public health goal: A challenge for contemporary health education and communication strategies into the 21st century. *Health Promot Int* 2000;15:259-67.
- Bahrambeygi F, Rakhshanderou S, Ramezankhani A, Ghaffari M. Hospital health literacy conceptual explanation: A qualitative content analysis based on experts and population perspectives. *J Educ Health Promot* 2023;12:31.